WHAT IS CLAIMED IS:

1. A node comprising first, second, and third layers, wherein:

a packet is mapped in said first layer;

said first layer judging whether the packet is to be dropped at said node or to be hopped to a next node;

said first layer transmitting the packet to said third layer through said second layer when said first layer judges that the packet is to be dropped at said node.

2. A node as claimed in claim 1, wherein said first layer transmits, when said first layer judges that the packet is to be hopped to said next node, the packet to said next node by making the packet cut through said first layer.

3. A node comprising first, second, and third layers, wherein:

said second layer judges, without terminating said first layer, whether a packet supplied from said first layer is to be dropped at said node or to be hopped to a next node;

said second layer transmitting the packet to said third layer when said second layer judges that the packet is to be dropped at said node.

4. A node as claimed in claim 3, wherein said second layer transmits, when said second layer judges that the packet is to be hopped to said next node, the packet to said next node by making the packet cut through said second layer.

5. A node comprising first, second, and third layers, wherein:

said second layer transmits, when a packet supplied from said first layer is not to be dropped at said node, the packet to a next node by making the packet cut through said second layer without terminating said first layer;

said second layer transmitting the packet to said third layer when the packet is to be dropped at said node.

6. A node comprising first, second, and third layers, wherein:

if packets to be dropped and not to be dropped at said node are both contained in a transmission path, said second layer monitors all packets in said transmission path to transmit, when the packet is not to be dropped at said node, the packet to a next node by making the packet cut through said second layer and to transmit the packet to said third layer when the packet is to be dropped at said node.

7. A transmission apparatus comprising:

a time slot extracting section for converting an input optical signal supplied through a first point into an input electric signal and for selecting among time slots in a transmission path of said input electric signal a particular time slot which includes a packet to be dropped at a second point;

a drop packet extracting section for monitoring all packets in the particular time slot selected in said time slot extracting section to identify whether or not each packet is to be dropped at said second point;

an add packet inserting section for packet-multiplexing the packet not to be dropped at said second point and a packet inserted at said second point to produce a packet-multiplexed packet; and

a signal transmitting section for inserting into an appropriate time slot of the transmission path the packet-multiplexed packet to be sent to a third point, converting an output electric signal including the transmission path into an output optical signal, and delivering the output optical signal to said third point.

8. A node comprising first, second, and third layers, wherein:

a cell is mapped in said first layer;

said first layer judging whether the cell is to be dropped at said node or to be hopped to a next node;

said first layer transmitting the cell to said third layer through said second layer when said first layer judges that the cell is to be dropped at said

node.

9. A node as claimed in claim 8, wherein said first layer transmits, when said first layer judges that the cell is to be hopped to said next node, the cell to said next node by making the cell cut through said first layer.

10. A node comprising first, second, and third layers, wherein:

said second layer judges, without terminating said first layer, whether a cell supplied from said first layer is to be dropped at said node or to be hopped to a next node;

said second layer transmitting the cell to said third layer when said second layer judges that the cell is to be dropped at said node.

11. A node as claimed in claim 10, wherein said second layer transmits, when said second layer judges that the cell is to be hopped to said next node, the cell to said next node by making the cell cut through said second layer.

12. A node comprising first, second, and third layers, wherein:

said second layer transmits, when a cell supplied from said first layer is not to be dropped at said node, the cell to a next node by making the cell cut through said second layer without terminating said first layer;

said second layer transmitting the cell to said third layer when the cell is to be dropped at said node.

13. A node comprising first, second, and third layers, wherein:

if cells to be dropped and not to be dropped at said node are both contained in a transmission path, said second layer monitors all cells in said transmission path to transmit, when the cell is not to be dropped at said node, the cell to a next node by making the cell cut through said second layer and to transmit the cell to said third layer when the cell is to be dropped at said node.

14. A transmission apparatus comprising:

a time slot extracting section for converting an input optical signal

supplied through a first point into an input electric signal and for selecting among time slots in a transmission path of said input electric signal a particular time slot which includes a cell to be dropped at a second point;

a drop cell extracting section for monitoring all cells in the particular time slot selected in said time slot extracting section to identify whether or not each cell is to be dropped at said second point;

an add cell inserting section for cell-multiplexing the cell not to be dropped at said second point and a cell inserted at said second point to produce a cell-multiplexed cell; and

a signal transmitting section for inserting into an appropriate time slot of the transmission path the cell-multiplexed cell to be sent to a third point, converting an output electric signal including the transmission path into an output optical signal, and delivering the output optical signal to said third point.

15. A transmission method carried out in a node comprising first, second, and third layers, comprising the steps of:

judging, in said first layer where a packet is mapped, whether said packet is to be dropped at said node or to be hopped to a next node; and

transmitting in said first layer the packet to said third layer through said second layer when said first layer judges that the packet is to be dropped at said node.

16. A transmission method as claimed in claim 15, further comprising the step of:

transmitting in said first layer, when said first layer judges that the packet is to be hopped to said next node, the packet to said next node by making the packet cut through said first layer.

17. A transmission method carried out in a node comprising first, second, and third layers, comprising the steps of:

judging in said second layer, without terminating said first layer, whether a packet supplied from said first layer is to be dropped at said node or to be hopped to a next node; and

transmitting in said second layer the packet to said third layer when said second layer judges that the packet is to be dropped at said node.

18. A transmission method as claimed in claim 17, further comprising the step of:

transmitting in said second layer, when said second layer judges that the packet is to be hopped to said next node, the packet to said next node by making the packet cut through said second layer.

19. A transmission method carried out in a node comprising first, second, and third layers, comprising the steps of:

transmitting in said second layer, when a packet supplied from said first layer is not to be dropped at said node, the packet to a next node by making the packet cut through said second layer without terminating said first layer; and

transmitting in said second layer the packet to said third layer when the packet is to be dropped at said node.

20. A transmission method carried out in a node comprising first, second, and third layers, comprising the step of:

monitoring in said second layer, if packets to be dropped and not to be dropped at said node are both contained in a transmission path, all packets in said transmission path to transmit, when the packet is not to be dropped at said node, the packet to a next node by making the packet cut through said second layer and to transmit the packet to said third layer when the packet is to be dropped at said node.

21. A transmission method comprising the steps of:

converting an input optical signal supplied through a first point into an input electric signal;

selecting among time slots in a transmission path of said input electric signal a particular time slot which includes a packet to be dropped at a second point;

monitoring all packets in the particular time slot selected in said selecting step to identify whether or not each packet is to be dropped at said second point;

packet-multiplexing the packet not to be dropped at said second point and a packet inserted at said second point to produce a packet-multiplexed packet;

inserting into an appropriate time slot of the transmission path the packet-multiplexed packet to be sent to a third point,

converting an output electric signal including the transmission path into an output optical signal; and

delivering the output optical signal to said third point.

22. A transmission method carried out in a node comprising first, second, and third layers, comprising the steps of:

judging, in said first layer where a cell is mapped, whether said cell is to be dropped at said node or to be hopped to a next node; and

transmitting in said first layer the cell to said third layer through said second layer when said first layer judges that the cell is to be dropped at said node.

23. A transmission method as claimed in claim 22, further comprising the step of:

transmitting in said first layer, when said first layer judges that the cell is to be hopped to said next node, the cell to said next node by making the cell cut through said first layer.

24. A transmission method carried out in a node comprising first, second, and third layers, comprising the steps of:

judging in said second layer, without terminating said first layer, whether a cell supplied from said first layer is to be dropped at said node or to be hopped to a next node; and

transmitting in said second layer the cell to said third layer when said second layer judges that the cell is to be dropped at said node.

25. A transmission method as claimed in claim 24, further comprising the step of:

transmitting in said second layer, when said second layer judges that the cell is to be hopped to said next node, the cell to said next node by making the cell cut through said second layer.

26. A transmission method carried out in a node comprising first, second, and third layers, comprising the steps of:

transmitting in said second layer, when a cell supplied from said first layer is not to be dropped at said node, the cell to a next node by making the cell cut through said second layer without terminating said first layer; and

transmitting in said second layer the cell to said third layer when the cell is to be dropped at said node.

27. A transmission method carried out in a node comprising first, second, and third layers, comprising the step of:

monitoring in said second layer, if cells to be dropped and not to be dropped at said node are both contained in a transmission path, all cells in said transmission path to transmit, when the cell is not to be dropped at said node, the cell to a next node by making the cell cut through said second layer and to transmit the cell to said third layer when the cell is to be dropped at said node.

28. A transmission method comprising the steps of:

converting an input optical signal supplied through a first point into an input electric signal;

selecting among time slots in a transmission path of said input electric signal a particular time slot which includes a cell to be dropped at a second point;

monitoring all cells in the particular time slot selected in said selecting step to identify whether or not each cell is to be dropped at said second point;

cell-multiplexing the cell not to be dropped at said second point and a cell inserted at said second point to produce a cell-multiplexed cell;

inserting into an appropriate time slot of the transmission path the cell-multiplexed cell to be sent to a third point,

converting an output electric signal including the transmission path into an output optical signal; and

delivering the output optical signal to said third point.